

## REMARKS

This application has been carefully reviewed in light of the office action mailed February 14, 2002. Claims 1-25 are pending in this application. Applicants respectfully request early and favorable acceptance of this application.

Rejections under 35 U.S.C. § 102

Claims 1-26 are rejected under 35 U.S.C. § 102(b) as being anticipated by Madson, U.S. Patent Application Publication No. 2001/0049167. Claim 26 is cancelled, rendering the rejection moot with respect to claim 26. With respect to the other claims, Applicants respectfully traverse the rejection.

Claim 1 as amended recites a method of forming a trench in a semiconductor device, comprising, among other things, forming a protruding portion (e.g., 18) in a masking material (e.g., 14), depositing a semiconductor material (e.g., 24), removing the protruding portion to form the trench, and etching the semiconductor material to round off corners of the trench.

The Madson reference discloses several methods of manufacturing a trench MOSFET using a blanket or selective epitaxial growth to form the trench.

The Madson reference does not disclose a step of etching semiconductor material to round off corners of a trench. The reference is silent regarding rounding off corners of a trench. The Madson devices are all shown with substantially vertical trench sidewalls that form sharp corners with the trenches' bottom surfaces. Moreover, the Madson trenches have a thick oxide layer formed at the bottom of the trenches,

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which would prevent a semiconductor etchant from reaching the corners of the trench. The thick oxide layer would make it virtually impossible to round off corners of a trench by etching. Consequently, the Madson devices would have more corner stress and a lower breakdown voltage than would devices whose trenches are formed by the claimed method.

Therefore, Applicants believe claim 1 as amended is not anticipated by the Madson reference. Claims 2-8 depend from an allowable base claim and therefore are allowable for at least the same reasons.

For reasons similar to those stated regarding claim 1, Applicants believe that independent claims 9 and 17, which include the steps of etching an epi layer to round off corners of a trench (claim 9), and etching a material to round off corners of the trench (claim 17), are not anticipated by the reference. Claims 10-16 depend from claim 9, which is believed allowable, and therefore are allowable as well. Claims 18-25 depend from base claim 17, and are therefore believed allowable.

Rejection under 35 U.S.C. § 103

Claim 27 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Madson in combination with Williams et al., U.S. Patent No. 6,239,463. Claim 27 is cancelled, rendering the rejection moot.

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CONCLUSION

Applicants have made an earnest attempt to place this case in condition for allowance. In light of the above amendments and remarks, applicants respectfully request reconsideration and allowance of claims 1-25.

Applicants have reviewed the other prior art made of record and believe that such art does not affect the patentability of the claimed invention.

No fees are believed due pursuant to rule 1.136(a), but the Commissioner is hereby authorized to charge any fees or credit any overpayment to Deposit Account 501086.

If there are matters which can be discussed by telephone to further the prosecution of this application, applicants invite the examiner to call the undersigned attorney at the examiner's convenience.

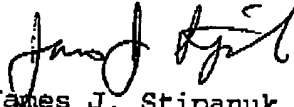
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Date: May 14, 2002

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